

16 May 1958

MEMORANDUM FOR: Special Assistant to the DCI  
for Planning and Development

SUBJECT : CHALICE Operational Procedures Review

REFS A. : CHAL 0022

B. : TS #155064

C. : TS #155065

1. In response to your request, a more detailed review has been made concerning the use of a backup aircraft to accompany the primary mission aircraft to the point of penetration.

2. In the initial review contained in Ref C, reliability was considered to have been firmly established as regards penetration missions, in that, on 25 actual overflights of denied territory, there was not a single abort which would have been covered had an airborne spare accompanied the primary mission aircraft to the point of penetration. Further, in a total of 123 Headquarters-directed missions of all categories, there was a total of only three instances where a spare aircraft could have been used. One of these was the case wherein the aircraft crashed approximately 30 minutes after take-off from Weisbaden and the other two recently occurred in the Indonesian operations brought about by pressurization loss shortly after take-off. In every other case malfunctions of any kind were not known prior to penetration or to where, it must be assumed, penetration would have occurred. In operating from bases in close proximity to Soviet radar such as in Turkey and West Germany, practically speaking, the radar line would have to be considered as the point of penetration rather than the actual geographical border of the denied land mass to be penetrated. This in effect reduces the time element after take-off in which a malfunction must occur. In addition, no instance of a ground abort occurred on any of the penetration missions.

3. To insure the availability of a spare would undoubtedly require augmentation of each of our two overseas detachments with at least one additional aircraft as well as an increase in the camera and ELINT equipment inventory and the necessary personnel to support this augmentation. On single sorties from our permanent bases the present aircraft, equipment and personnel authorizations are considered adequate to support this concept. However, in the case of staging operations [redacted]

[redacted] it would take a considerable augmentation of equipment and personnel in addition to more hangar, shop and billeting facilities at the staging sites. It would practically double airlift support requirements since the spare aircraft must burn its fuel load down to 500 gallons prior to landing.

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4. As an alternate to the use of an airborne spare, a ground spare could be prepared to take off at a pre-determined time after the primary airplane took off. This timing could be such so as to give the primary aircraft time to have reached the point of penetration, discover a malfunction, abort and report such fact back to the home base. In some instances this might be feasible. The one drawback to this system is that, in addition to doubling the load on flight planning and aircraft and equipment preparation, missions are planned into the primary target area to take maximum advantage, time-wise, of sun angle and favorable weather. If a spare aircraft were launched, for example, approximately one hour and a half after the primary take off, in some cases, the opportunity for most favorable sun angle and optimum weather conditions would have been jeopardized. In fact, there are many times when the combination of favorable sun angle and most favorable weather do not coincide sufficiently to warrant launching a mission. Consequently the mission is delayed until these two most important factors do coincide.

5. Although it is conceded that the possibility of an airborne or ground spare paying off does exist, it is felt it would be an extremely rare occurrence. Of greater significance is the fact that even though an abort does occur prior to penetration, under our present method of operations, little is lost. Since permission to operate penetration missions over the past two years has been granted on a piece-meal basis, provided we do not make an actual penetration, an abort assumes the same status as not having flown at all. The only real loss would be the loss of the opportunity to take advantage of the good weather which may have existed that day.

6. To insure that penetration is not commenced with malfunctioning camera equipment, the pilots are instructed to cycle cameras and check other equipment prior to penetration so that if a malfunction does occur or is suspected, the aircraft can be aborted before actual penetration is made. This procedure may have saved a non-productive penetration in the case of the second Klyuchi mission. In this instance the pilot, in making his scheduled camera checks, detected a malfunction just prior to penetration. The actual trouble was a poor contact in the camera mode selector switch in the cockpit. By cycling the mode selector switch several times the pilot was able to get the switch to close and therefore was able to complete the mission. However, had he not been able to get the primary cameras operating properly, his instructions are that he is to abort the mission if prior to penetration. If a malfunction of camera equipment occurs after penetration, policy is to continue the mission since it may affect only a portion of the equipment, as for example, failure of only one of the three cameras in the A-2 configuration. To abort because of aircraft difficulty is, of course, at the pilot's discretion.

7. As for the malfunction of the tracker camera  it should be noted that this resulted in, practically speaking, no loss of intelligence. It may be remembered that the primary cameras operated

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over the entire portion of the route which had acceptable photographic weather. As the tracker's function is to (1) aid in plotting and (2) to provide minimum photographic capability when primary cameras are not operating, this particular tracker malfunction was not considered to have detracted from the intelligence potential of [REDACTED]. The present tracker camera installation does not provide for a light to indicate tracker operation. It is turned on with the master equipment switch at take-off and operates continuously. An indicator light is not considered essential as failure of the tracker camera only is not considered sufficient cause to abort a mission.

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8. In view of the foregoing, the simultaneous launching of an airborne spare for all penetration missions is not recommended. It is further recommended that a ground spare not be required. There may be instances where a spare would be considered most desirable. This would be especially true in a situation where the penetration mission must be over a given point at a definite time in order to take advantage of an impending occurrence such as the exact time of a test rocket launching. If this situation arises a spare should most certainly be used. The above recommendations are based on the fact that a most thorough pre-flight inspection is made of all equipment in sufficient time to correct discrepancies or make substitutes so that at take-off time everything is working perfectly.



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Director of Operations  
DPS/DCI

DPS/DCI/ [REDACTED]

## Dist.:

- Cy #1 - addressee
- Cy #2 - JAG
- Cy #3 - Mat
- Cy #4 - Cont'g
- Cy #5 - RI
- Cy #6 - Ops subj
- Cy #7 - Ops chron

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